

Environmental Management

A Periodic Publication of the Rocky Flats Cleanup



August/September 1994

EG&G ROCKY FLATS

Seismic Study: An Earthquake at Rocky Flats?

What's shakin' at Rocky Flats? Maybe the ground. As residents of Montrose and Telluride discovered recently, Colorado is not immune to earthquakes.

Small Chance

Not that Front Range citizens should start sleeping under their mattresses. Though this area is seismically "active", the chance of a major quake happening near Rocky Flats is actually quite small. Not so small, however, as to escape the notice of the Defense Nuclear Facilities Safety Board (DNFSB). The Board, which addresses safety issues at facilities such as Rocky Flats, has recommended that a seismic study be con-

ducted at the site, with particular emphasis on Building 371.

16 Areas Investigated

The seismic study is under the purview of the Systematic Evaluation Program (SEP) group, whose task is to evaluate the ability of a wide range of site structures and hardware to withstand a variety of natural (and some unnatural) disasters. "There are 16 safety areas which will be looked at," said EG&G SEP Manager Faris Badwan. "Things like tornadoes, nuclear criticality, fire protection and hazardous material control."

And earthquakes.

Little Info Available

Perhaps because of Colorado's relatively low incidence of quakes, no recent in-depth seismic studies have been done of this area. According to Civil/Structure Team Leader Bill Peregoy, only one seismic event at or above magnitude 6.0 (slightly smaller than the Northridge, California temblor that occurred last January) has happened here. "There's a dearth of information about seismic activity in this area because not much has happened here in the last 120 years," Bill notes. "In California, there is a lot more information available."

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Environmental Institute Taps Great Minds For ER

By any standard, environmental restoration at the Rocky Flats site is a major undertaking that will demand a combined use of many diverse resources. The Rocky Flats Environmental Institute, a recently-formed (and rapidly expanding) alliance between Rocky Flats and a network of universities, colleges, busi-

nesses and government agencies, should provide a constant supply of at least one vital resource - brainpower.

Brains From All Over

The fledgling program's leaders have already recruited the Colorado School of Mines, the University of Denver, Colorado State University, the University of Colorado and several community colleges. Agreements are also being pursued with other academic institutions, state and federal agencies, the international community and the private sector. Dr. John Golden, a professor and former administrator at Colorado School of Mines, has been named to head the project.

will allow access to the academic community at the highest level. Previously inaccessible researchers and scientists on the leading edge of their fields will support Rocky Flats cleanup," said Gary Konwinski, group manager in Operable Unit 2 and EG&G's lead on the Institute program.

"And it will reach across the spectrum of educational backgrounds, experience, interests and strengths," added Gary Lietz of the Technology Support Group of the Department of Energy's Rocky Flats Field Office (DOE/RFFO). "We can contribute to their capabilities while accessing their expertise. The benefits become exponential."

"The Institute will provide research and development avenues that

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ADMIN RECORD

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So the first step for the Seismic Hazard Study team was to get some valid information. Risk Engineering, Inc. was contracted to perform the actual study. The data have been submitted in draft form and will be released in September. The study includes a history of area earthquakes, locates potential sources of future quakes, and notes how site geology might transmit a quake's movement to buildings like 371.

Risk Assessment

"The whole purpose of the study is to determine risk - to structures and to people - from a seismic event," Peregoy explained. "The formula for doing that is based on the historical frequency of quakes and the consequences that could occur if a building is damaged. The fewer the number of quakes, or the lesser the consequences, the lower the risk. We are looking at geologic time spans of five to 10 thousand years."

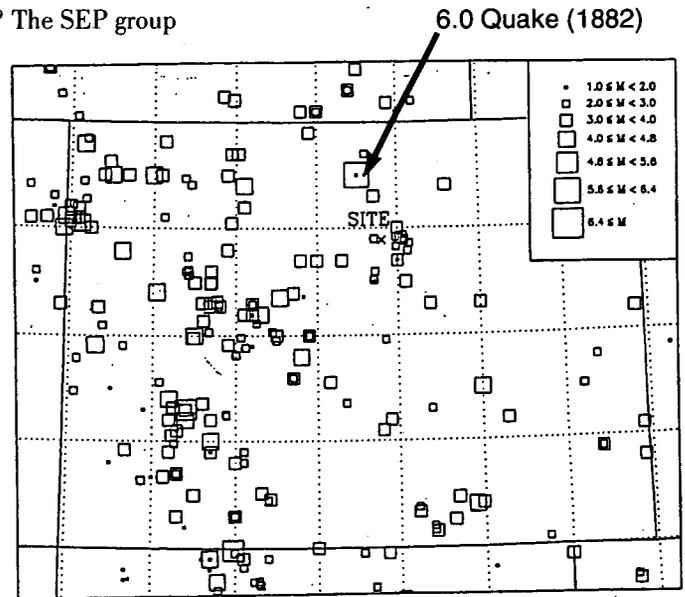
The formula boils down to a numerical value, called a "level," that

can tell engineers how well a building is likely to ride out an earthquake. "Building 371 was built to a level of .14," says Peregoy, "but if the study indicates that value isn't high enough to give a good safety margin, then we may have to make structural improvements."

So how big is the risk from a seismic event likely to be? The SEP group is currently immersed in another project that will investigate potential faulting near Building 371. "We're digging a trench over a possible fault to see if any disturbance exists in the alluvium (the 20-foot-thick layer of rocky soil overlaying bedrock). That deposit is about a million years old.

If no movement has occurred there and the faulting is not active, then we can feel a little safer."

Several months will pass before the quake risk "bottom line" for the site is finally determined. Everyone is hoping that line will turn out to be safely flat.



This map shows the approximate size and location of earthquakes in Colorado since 1870.

Institute Taps Great Minds -
Continued from page 1

Ideas Move Fast

The program not only allows access to some of the best academic resources in Colorado, it is designed to take projects from idea to application in record time.

"It breaks our work up into nice, neat little proposals. The interval between the time an idea hits the desk and the time it is ready to go can be a matter of just weeks," Konwinski said.

The institute is already developing its first projects: removing plutonium from impounded waters, developing a remediation test bed to determine how substances with plutonium-like attributes are transported through soil, and particle movement research.

While the Environmental Institute is designed to bring in researchers and

scientists primarily from the academic community, it also will tie into existing EG&G Technology Development and research programs. Says Konwinski: "All those resources will feed into the entire DOE complex. This is designed to be a prototype and it might also encourage other sites to think, 'Gee, Rocky Flats is already set up to do this project,' consequently they may bring some of their work here. The potential associated with this program could be huge."

Worker Opportunities

Finally, the Institute will provide training and education programs for aspiring environmental restoration "brains" who already work at Rocky Flats. Courses of study ranging from certificates and associate degrees to advanced-degree programs are being developed for employees to improve their skills and marketability in the environmental field.

"This will offer opportunities to potentially displaced workers. We have searched universities for educational programs that match the site's needs. Courses of study may also be developed if none that fit those needs exist," concludes Konwinski.

If all goes as planned, brains both on and offsite will be getting a workout, compliments of the Rocky Flats Environmental Institute.

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UPCOMING PUBLIC MEETINGS

- October 19, 1994 Rocky Flats Monthly Public Information Meeting**
 Contact: Dennis Connors, 966-8164
 7:00 p.m. - 9:00 p.m., Arvada Center for the Arts and Humanities, 6901 Wadsworth Blvd., Arvada
 Topics: NCPP Update, Draft Site Treatment Plan, Industrial Area IM/IRA Comments
- October 25, 1994 Environmental Exchange of Information Meeting**
 Contact: Kathryn Madore, 966-3844
 1:30 p.m., Broomfield City Council Chamber, No. 6 Garden Office Center, Broomfield
- November 16, 1994 Rocky Flats Monthly Public Information Meeting**
 Contact: Dennis Connors, 966-8164
 7:00 p.m. - 9:00 p.m.
 Location to be Determined
- November 29, 1994 Environmental Exchange of Information Meeting**
 Contact: Kathryn Madore, 966-3844
 1:30 p.m., Broomfield City Council Chamber, No. 6 Garden Office Center, Broomfield

Public Invited to Use Reading Rooms

The following reading rooms contain current information, technical reports, and reference documents on environmental restoration at the Rocky Flats Environmental Technology Site:

Rocky Flats Reading Room*
Front Range Community College Library
 3645 West 112th Avenue
 Level B, Center of Building
 Westminster, Colorado 80030
 (303) 469-4435

Hours:
 Monday - Tuesday 10:30 am - 6:30 pm
 Wednesday 10:30 am - 4:00 pm
 Thursday - Friday 8:00 am - 4:00 pm

Citizen's Advisory Board
 9035 Wadsworth Parkway
 Suite 2250
 Westminster, Colorado 80021
 (303) 420-7855

Hours:
 Monday - Friday 8:30 am - 5:00 pm

EPA Superfund Records Center*
 999 18th Street, Suite 500
 Denver, Colorado 80202-2405
 (303) 293-1807

Hours:
 Monday - Friday 8:00 am - 4:30 pm

Colorado Department of Public Health & Environment*
Hazardous Materials and Waste Management Division
 4300 Cherry Creek Drive South
 Bldg. A

Denver, Colorado 80222-1530
 (303) 692-3312

Hours:
 Monday - Friday 8:00 am - 5:00 pm

Standley Lake Library
 8485 Kipling Street
 Arvada, Colorado 80005
 (303) 423-4600

Hours:
 Monday - Friday 10:00 am - 9:00 pm
 Friday - Saturday 10:00 am - 5:00 pm
 Sunday 12:00 pm - 5:00 pm

**United States Department of Energy
 Freedom of Information and Privacy
 Branch Office**

1000 Independence Avenue, S. W.
 Washington, D.C. 20585
 (202) 586-6025

Hours:
 Monday - Friday 9:00 am - 4:00 pm
 (Eastern Time Zone)

*Information Repository

FEEDBACK

Let us know what you think about this Update .

Fax or mail your comments, questions or suggestions to:

FAX: (303) 966-6153

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